

WHAT IS CLAIMED IS:

1. A battery pack with a charge control function, the battery pack comprising:

a charge protection circuit for turning a discharge control switch on or off to control a discharge current which flows from a secondary battery to a load and turning a charge control switch on or off to control a charge current which flows from a charger to the secondary battery; and

a charge control circuit having a function of turning the charge control switch on or off to stop the charging of the secondary battery through the charger when an abnormal voltage is input.

2. The battery pack according to Claim 1, wherein:

the discharge control switch includes a discharge control field-effect transistor having a gate serving as a control terminal, and

the charge control switch includes a charge control field-effect transistor having a gate serving as a control terminal.

3. The battery pack according to Claim 2, wherein:

the discharge control field-effect transistor controls an overdischarge control circuit included in the charge protection circuit, and

the charge control field-effect transistor controls an overcharge control circuit included in the charge protection circuit and also controls the charge control circuit.

4. The battery pack according to Claim 3, wherein:

a gate voltage of the charge control field-effect transistor is controlled to adjust a drain current thereof so that the one charge control field-effect transistor performs both charge control and overcharge control.

5. The battery pack according to Claim 1, wherein:

the charge protection circuit includes a temperature detection unit.

6. The battery pack according to Claim 5, wherein:  
the temperature detection unit detects a temperature in discharge control through the discharge control switch and detects a temperature in the charge control through the charge control switch.
7. The battery pack according to Claim 6, wherein:  
the temperature detection unit includes a thermistor.